

REMARKS

Claims 1, 9 and 20 have been amended. Claim 22 has been added. Claims 1, 3, 6-9, 12-15, 17 and 19-22 are currently pending in this application. Applicants reserve the right to pursue the original and other claims in this and other applications. Applicants respectfully request reconsideration in light of the following remarks.

Claims 1, 3, 6-9, 12, 13, 15, 17 and 19-21 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ishikawa et al. (JP 2002-301088) ("Ishikawa"). This rejection is respectfully traversed and reconsideration is respectfully requested.

Claim 1 recites an "apparatus for coagulating tissue" including an "electrode adapted to produce a high-frequency current," a "gas-delivering device having an outlet and being adapted to deliver an inert gas from said outlet into a space defined between said electrode and said tissue, such that a plasma is produced between said electrode and said tissue when said high-frequency current is applied to said inert gas, wherein a distal end of said electrode projects out of said gas-delivering device" and a "guiding device comprised of an electrically insulating material and disposed at said distal end of said electrode, said guiding device for directing and guiding said plasma such that at least a part of said plasma is diverted in a predetermined direction." The "cross-section of at least a portion of said guiding device is at least a size of said outlet in order to divert said plasma into said space substantially radially with respect to said outlet of said gas-delivering device" and the "electrode is configured such that it may be retracted and pushed forward with respect to the gas-delivering device."

Claim 9 recites an "apparatus for argon-plasma coagulating tissue" including a "gas-delivering device," an "electrode disposed substantially coaxially with the gas-delivering device and configured to generate a high-frequency current, wherein a distal end of the electrode projects outward through an outlet of the gas-delivering device" and a "guiding device disposed at the distal end of the electrode, wherein the guiding device is configured for guiding a plasma stream exiting the gas-delivering device, the plasma stream being produced when said high-frequency current is applied to an inert gas delivered by the gas-delivering device." The "guiding device is comprised of

a material that is electrically insulating and thermally stable” and “is disposed in an axially symmetric manner around the distal end of the electrode and a cross-section of at least a portion of said guiding device is at least a size of said outlet of the gas-delivering device in order to divert the plasma stream into a surrounding space substantially radially with respect to the outlet of the gas delivering device” and the “electrode is configured such that it may be retracted and pushed forward with respect to the gas-delivering device.”

Claim 20 recites an “argon plasma coagulating probe assembly” including a “tube,” an “electrode disposed substantially coaxially with the tube and configured to generate a high-frequency current, wherein a distal end of the electrode projects outward through an outlet of the tube” and a “guiding device disposed at the distal end of the electrode, wherein the guiding device is configured for guiding an inert gas stream delivered from said outlet of the tube, wherein a cross-section of at least a portion of said guiding device is at least a size of said outlet in order to divert said inert gas stream substantially radially with respect to said outlet of said gas-delivering device.” The “guiding device is comprised of an electrically insulating and thermally stable material and is configured to have a concave configuration on a side thereof that faces the outlet and is further configured to prevent mechanical damage if the guiding device touches the tissue” and the “electrode is movable relative to said outlet such that when said electrode is moved into a retracted position said guiding device closes said outlet in a substantially leakproof manner.”

As discussed with respect to the disclosed embodiments, an apparatus for coagulating tissue includes a guiding device at a distal end of the instrument that is configured for directing a plasma generated by the device, such that the plasma flows into a space substantially radially with respect to the outlet of the gas delivering device. This arrangement “makes it unnecessary for the apparatus to be rotated within a body cavity during an endoscopic operation in order to coagulate regions of tissues situated radial to the outlet.” Specification, ¶[0009]. As further stated in the present application, it “is the objective of the invention to develop an apparatus ... such that by simple means it becomes possible ... to specify a direction of this plasma beam that deviates from an axial direction.” Specification, ¶[0004]. In order to specify the direction of the plasma flow, the guiding device must be large enough to redirect a substantial amount of the plasma exiting from the

apparatus. As further discussed with respect to the disclosed embodiments, “when [the electrode] is in a retracted state, the guiding device closes the outlet in a substantially leakproof manner.” Specification, ¶[0012]. In order to do this, the cross-section of the guiding device contacting the opening must be at least as large as the outlet opening. See also, FIGS. 1-3.

Ishikawa discloses an instrument for coagulating tissue. The instrument includes an electrode (knife 11 of Fig. 2 and 3 of Ishikawa) and a gas delivering device having an outlet and being adapted to deliver an inert gas from the outlet into a space defined between the electrode and the tissue. However, Applicants respectfully submit that Ishikawa fails to disclose a guiding device as claimed. The Examiner relies on the spherical insulating part 12 of Figs. 3, 6 and 7 of Ishikawa as disclosing this feature. However, the spherical insulating part 12 is not, in fact, a guiding device for directing plasma, but is instead a positioning aid for the instrument. See, Ishikawa, ¶[0042]. It allows the user of the instrument to determine the distance between the opening of the instrument and the tissue by setting the distance between the insulating part 12 and the opening. Further, the insulating part 12 of Ishikawa has a cross-sectional diameter that is substantially smaller than the opening through which the plasma flow is delivered. The guiding device as claimed, on the other hand, has a cross-sectional diameter which is at least the size of the opening of the gas-delivering device, in order that the plasma flow is diverted by the guiding device upon exiting the opening. See, e.g., Figs. 1-3.

Accordingly, Applicants respectfully submit that claims 1, 9 and 20 are allowable over Ishikawa. Claims 3, 6-8 and 21 depend from claim 1 and are allowable along with claim 1. Claims 12, 13, 15, 17 and 19 depend from claim 9 and are allowable along with claim 9. Applicants respectfully request the rejection be withdrawn and the claims allowed.

Claims 1, 3, 6-9, 12, 13, 15, 17 and 19-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Cosmescu (U.S. Patent No. 6,149,648) (“Cosmescu”) in view of Ishikawa. This rejection is respectfully traversed and reconsideration is respectfully requested.

As admitted by the Office Action, Cosmescu fails to recite the specifics of the claimed guiding device. Office Action, pg. 9. The Office Action relies on Ishikawa as disclosing this claimed guiding device. *Id.* For at least the reasons discussed above, Ishikawa does not disclose the guiding device, as claimed. Accordingly, Applicants respectfully submit that claims 1, 9 and 20 are allowable over the cited combination. Claims 3, 6-8 and 21 depend from claim 1 and are allowable along with claim 1. Claims 12, 13, 15, 17 and 19 depend from claim 9 and are allowable along with claim 9. Applicants respectfully request the rejection be withdrawn and the claims allowed.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ishikawa in view of LaFontaine et al. (U.S. Patent No. 5,902,328) (“LaFontaine”). Claim 14 also stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Cosmescu and Ishikawa in view of LaFontaine. These rejections are respectfully traversed and reconsideration is respectfully requested.

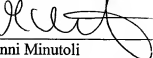
Claim 14 depends from claim 9, which is allowable over Ishikawa and the Ishikawa/Cosmescu combination for at least the reasons discussed above. LaFontaine is relied upon as disclosing a flattened surface at a surface (of a guiding device) facing away from the opening (Office Action, pgs. 17-18), but does not remedy the deficiencies of Ishikawa or the Ishikawa/Cosmescu combination. Further, LaFontaine discloses a device for treating a human heart with RF energy and does not relate to guiding a plasma used in argon plasma coagulation, as claimed. See, LaFontaine, col. 1, lines 11-17. Accordingly, Applicants respectfully submit that claim 9, along with claim 14, is allowable over the cited combinations. Applicants request the rejections be withdrawn and the claims allowed.

Applicants submit that new claim 22, which depends from claim 1, is allowable along with claim 1 as well as for other reasons.

In view of the above, Applicants believe that the pending application is in condition for allowance.

Dated: January 25, 2011

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